



TEST REPORT

REPORT NUMBER: I21W00052-EMC

ON

Type of Equipment: Wireless Module
Type of Designation: SIM7500A
Brand Name: SIMCom
Manufacturer: SIMCom Wireless Solutions Limited
FCC ID: 2AJYU-8PYA00A

ACCORDING TO

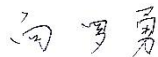
Subpart B, PART 15, RADIO FREQUENCY DEVICES

Chongqing Academy of Information and Communications Technology

Month date, year

Jan 06, 2022

Signature



Xiang Luoyong

Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.



Report No.: I21W00052

Revision Version

Report Number	Revision	Date	Memo
I21W00052-EMC	00	2022-01-06	Initial creation of test report

Chongqing Academy of Information and Communication Technology

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1. Test Laboratory

1.1. Testing Location

Name:	Chongqing Academy of Information and Communications Technology
FCC Registration Number:	CN1239
Address:	Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China
	No.19 East Road, Xiantao Big-data Valley, Yubei District, Chongqing, People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	21.5-23.6°C
Relative Humidity:	55.0-58.0%

1.3. Project data

Testing Start Date:	2021-12-16
Testing End Date:	2021-12-23

1.4. Signature



2022-01-06

Tan Haoyue
(Prepared this test report)

Date


2022-01-06

Xiao Yu
(Reviewed this test report)

Date


2022-01-06

Xiang Luoyong
Director of the laboratory
(Approved this test report)

Date

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2. Client Information

2.1. Applicant Information

Company Name:	SIMCom Wireless Solutions Limited
Address /Post:	Building 3, No. 289, Linhong Road, Changning District, Shanghai, P.R.China
City:	Shanghai
Country:	China
Telephone:	15902149520
Fax:	--
Email:	yue.hai@simcom.com
Contact Person:	Haiyue

2.2. Manufacturer Information

Company Name:	SIMCom Wireless Solutions Limited
Address /Post:	Building 3, No. 289, Linhong Road, Changning District, Shanghai, P.R.China
City:	Shanghai
Country:	China
Telephone:	15902149520
Fax:	--
Email:	yue.hai@simcom.com
Contact Person:	Haiyue

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3. Equipment under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

EUT Description	SIMCom Wireless Solutions Limited
Model name	SIM7500A
Brand name	SIMCom
LTE Frequency Band	2/4/12

Note: Photographs of EUT are shown in ANNEX B of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID	SN or IMEI	HW Version	SW Version	Date of receipt
S1	861475035587049	V2.01	B05V01	2021-12-13

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID	Description	SN
--	--	--

*AE ID: is used to identify the test sample in the lab internally.

dB*: is provided customer.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC CFR Part 15, Subpart B,	RADIO FREQUENCY DEVICES	October 1, 2020

5. Test Equipments Utilized

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Test Receiver	ESW 26	101382	00	1.50 SP1	R&S	2022-06-11
2	Test Receiver	ESU40	100350	01	4.43 SP3	R&S	2022-06-11
3	Ultra-wideband Log Periodic Antenna	VULB 9163	9163-586	--	--	Schwarzbeck	2022-11-11
4	Double Ridged Guide Antenna	9120D	9120D-1083	--	--	Schwarzbeck	2022-06-11
5	Test Receiver	ESR 3	102477	03	3.48 SP2	R&S	2022-06-11
6	Artificial Main Network	ENV 216	102368	--	--	R&S	2022-06-11
7	Fully anechoic chamber	FAC-5	--	--	2024-08-30	TDK	2024-08-30
8	Semi-anechoic chamber	FAC-10	--	--	2024-08-28	TDK	2024-08-28

Test software

No.	Name	version	SN	Manufacture
1	EMC32	V 9.26.01	--	R&S
2	EMC32	V10.20.10	--	R&S

6. Test Results

6.1. Summary of Test Results

FCC Rules	Name of Test	Result
15.109	Radiated Emission	Pass
15.107	Conducted Emission	Pass
Note: N/A means not applicable.		

7. Test Results

7.1. Radiated Emission

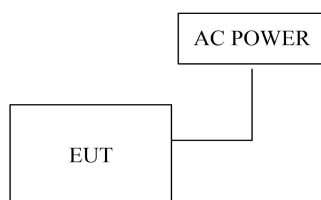
Specifications:	15.109
Date of Tests	2021-12-16—2021-12-23
Test conditions:	Ambient Temperature:21.5℃-22.5℃ Relative Humidity:55.0%RH-58%RH Air pressure:98.7kPa-99.2kPa
Operation Mode	Normal
Test Results:	Pass

Limit Level Construction(Except for Class A digital devices):

Frequency Range (MHz)	Quasi-Peak (dBuV/m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

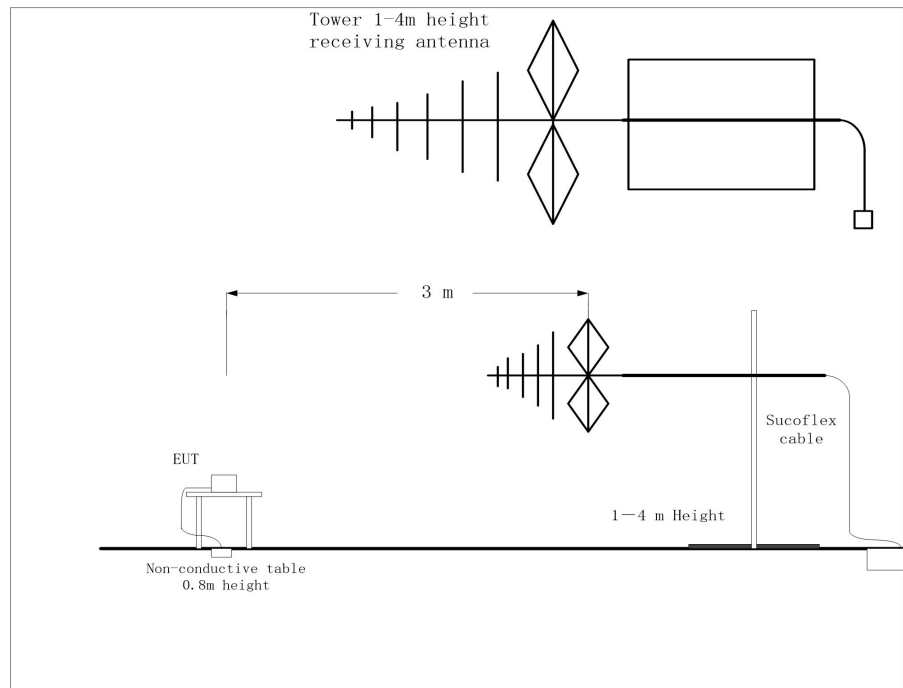
Frequency Range (MHz)	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	74	54

EUT Setup:



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Test Method:

For 30-1000MHz, the EUT was placed on the top of a rotating 0.8m table above the ground at a semi-anechoic chamber. The distance between the EUT and the received antenna was 3 meters. The table was rotated 360 degree and the received antenna mounted on a variable-height antenna tower was varied from 1m to 4m to find the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement. Tested in accordance with the procedures of ANSI C63.4-2014, section 8.3.

For 1000-18000MHz, the maximal emission value was acquired by adjusting the antenna height, and the table was rotated 360 degree to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement.

Uncertainty Measurement:

The measurement uncertainty (30MHz-1000MHz) is 4.09 dB (k=2).

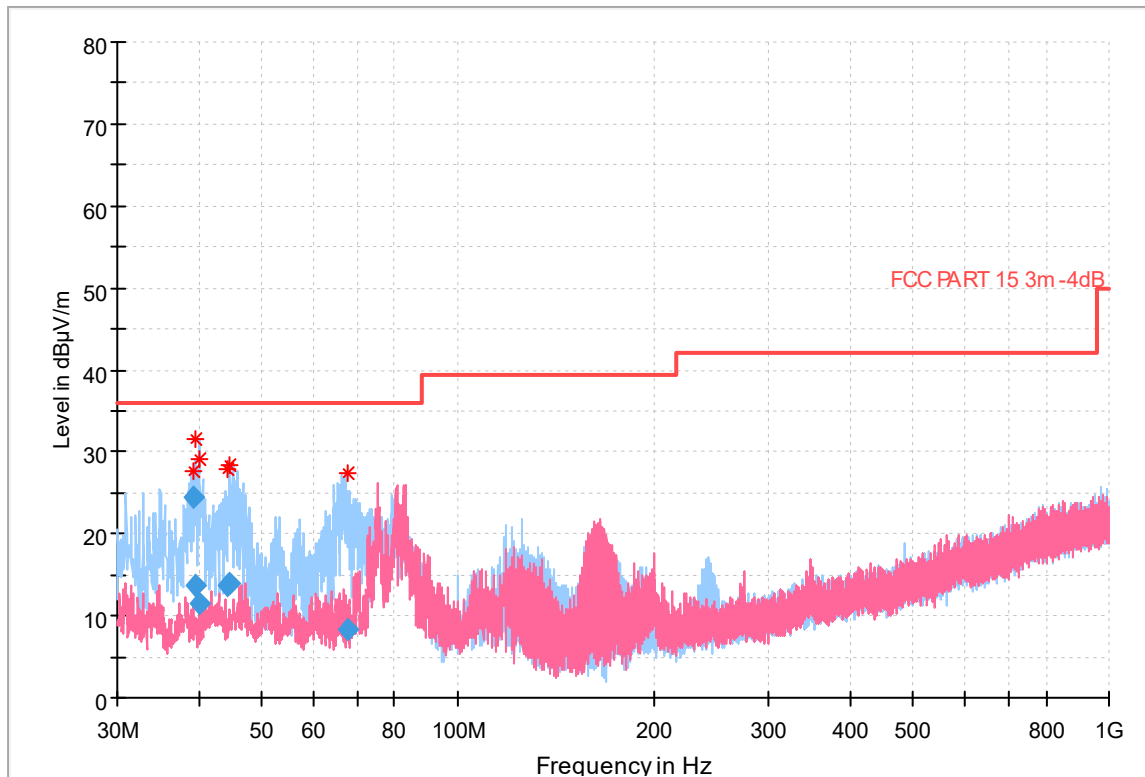
The measurement uncertainty (1000MHz-6000MHz) is 4.84 dB (k=2).

The measurement uncertainty (6000MHz-18000MHz) is 4.52 dB (k=2).

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Test Data



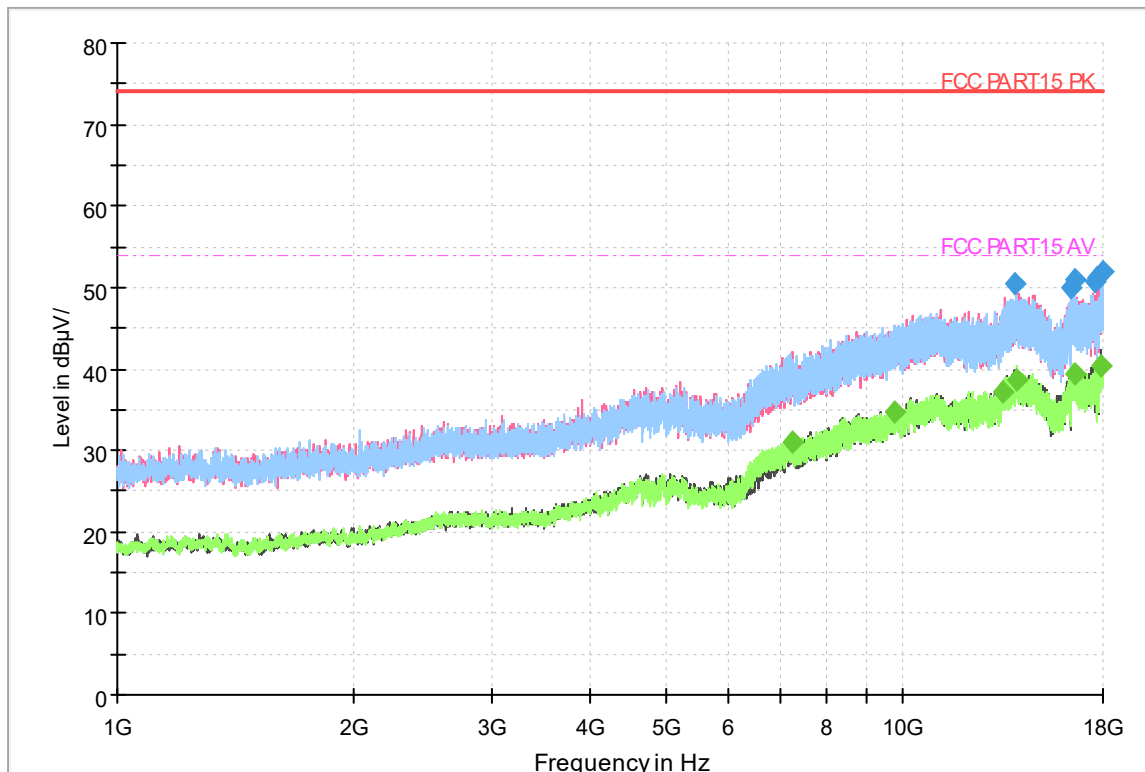
RE 30MHz-1GHz

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
39.404000	24.53	40.00	15.47	1000.0	120.000	106.0	H	-2.0
39.639500	13.71	40.00	26.29	1000.0	120.000	110.0	H	8.0
40.057500	11.48	40.00	28.52	1000.0	120.000	113.0	H	17.0
44.358500	13.67	40.00	26.33	1000.0	120.000	113.0	H	-37.0
44.532000	13.83	40.00	26.17	1000.0	120.000	109.0	H	-45.0
67.768000	8.30	40.00	31.70	1000.0	120.000	113.0	H	1.0

Note: Both H polarization and V polarization are tested. The figure shows the blue value of H polarization and the red value of V polarization synthesis

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RE 1GHz-18GHz

Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
7238.462000	---	31.13	54.00	22.87	50.0	1000.000	150.0	H	180.0
9790.757500	---	34.69	54.00	19.31	50.0	1000.000	150.0	H	180.0
13423.45850	---	37.10	54.00	16.90	50.0	1000.000	150.0	V	90.0
13922.54100	50.50	---	74.00	23.50	50.0	1000.000	150.0	V	0.0
13969.62900	---	38.62	54.00	15.38	50.0	1000.000	150.0	H	90.0
16377.51250	49.90	---	74.00	24.10	50.0	1000.000	150.0	H	180.0
16540.21650	---	39.36	54.00	14.64	50.0	1000.000	150.0	H	270.0
16553.93950	51.00	---	74.00	23.00	50.0	1000.000	150.0	H	270.0
17586.36000	50.80	---	74.00	23.20	50.0	1000.000	150.0	V	0.0
17692.32850	51.13	---	74.00	22.87	50.0	1000.000	150.0	V	180.0
17911.315000	---	40.44	54.00	13.56	50.0	1000.000	150.0	V	0.0
17981.28450	51.94	---	74.00	22.06	50.0	1000.000	150.0	H	90.0

Note: Both H polarization and V polarization are tested. The figure shows the maximum value of H polarization and V polarization synthesis.

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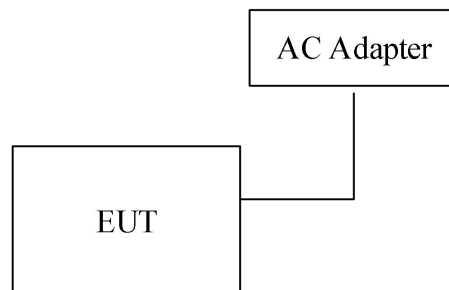
7.2. Conducted Emission

Specifications:	15.107
Date of Tests	2021-12-22
Test conditions:	Ambient Temperature:23.6°C Relative Humidity:58% Air pressure: 99.3kPa
Operation Mode	Normal
Test Results:	Pass
Note: Both EUT have been tested , and the data only reflect the worst case.	

Limit Level Construction:

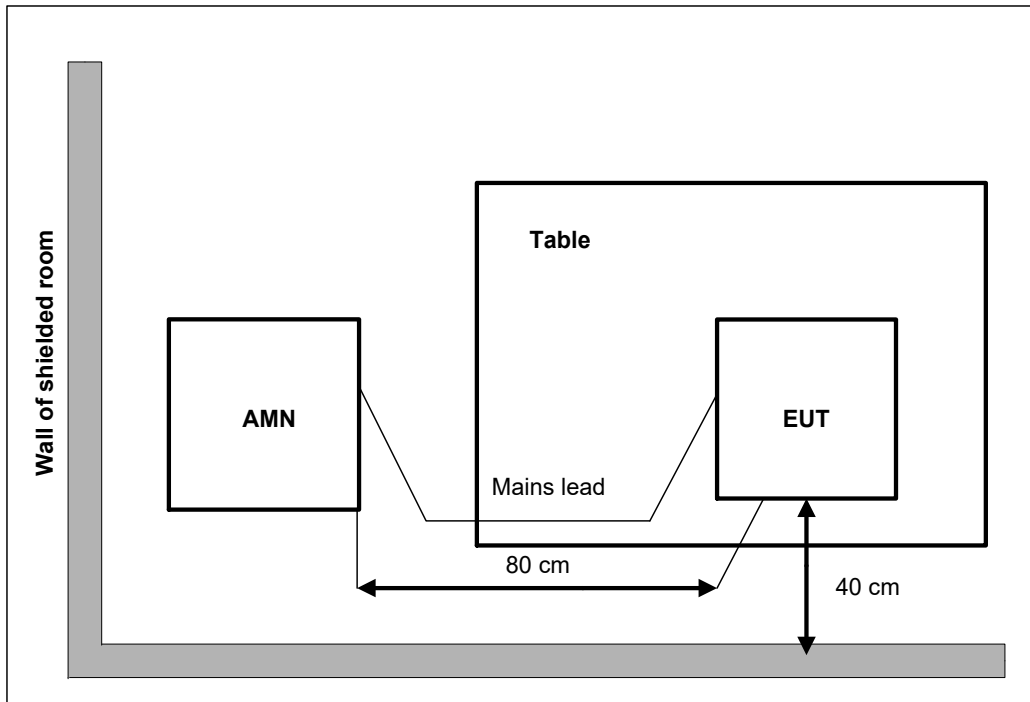
Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency		

EUT Setup:



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Test Method:

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies with the band 150 kHz to 30MHz shall not exceed the limits. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. Tested in accordance with the procedures of ANSI C63.4-2014, section 7.3

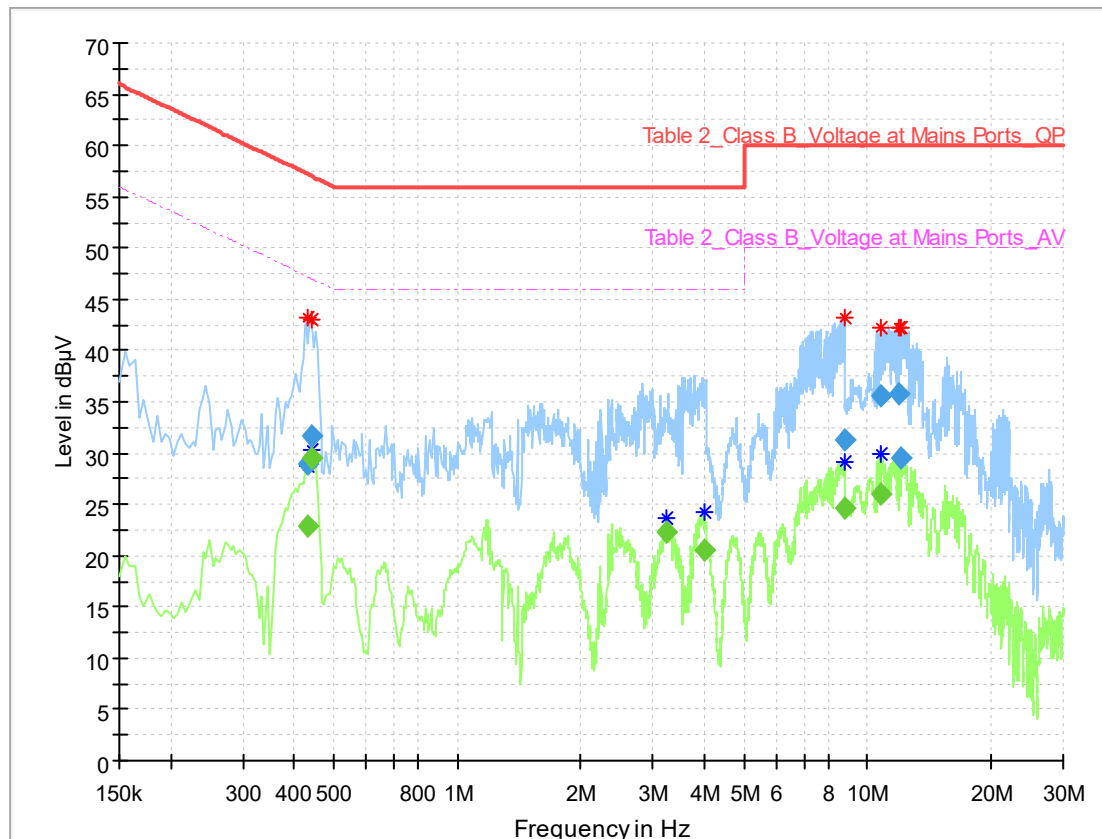
Uncertainty Measurement:

The measurement uncertainty is 1.83 dB (k=2).

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Test Data



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Marg in	Meas. Time	Bandwi dth	Line
0.433500	---	22.81	47.19	24.37	1000.0	9.000	N
0.433500	28.90	---	57.19	28.29	1000.0	9.000	N
0.442500	31.71	---	57.02	25.30	1000.0	9.000	N
0.442500	---	29.62	47.02	17.39	1000.0	9.000	N
3.246000	---	22.38	46.00	23.62	1000.0	9.000	N
4.024500	---	20.57	46.00	25.43	1000.0	9.000	N
8.799000	---	24.62	50.00	25.38	1000.0	9.000	N
8.808000	31.30	---	60.00	28.70	1000.0	9.000	N
10.779000	---	25.95	50.00	24.05	1000.0	9.000	L1
10.828500	35.64	---	60.00	24.36	1000.0	9.000	L1
11.922000	35.70	---	60.00	24.30	1000.0	9.000	N
12.057000	29.51	---	60.00	30.49	1000.0	9.000	N

Note: Both L line and N line are tested. The figure shows the maximum value of L line and N line synthesis.

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Annex A EUT Photos

See the document "I21W00052-External Photos".

See the document "I21W00052-Internal Photos".

Test photo See the document "I21W00052_EMC Test Setup Photos".

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ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

*****END OF REPORT*****

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